

SECTION 22.3 *Formation of the Atmosphere and Oceans*

In your textbook, read about the early atmosphere and oxygen in the atmosphere.

Answer the following questions.

1. What two gases probably dominated Precambrian Earth's atmosphere?

2. Why is Earth's atmosphere rich in nitrogen and oxygen today?

3. What occurs during the process of outgassing, and what role did this process play in the formation of the atmosphere?

4. What is the likely source of oxygen in the early atmosphere?

5. Did oxygen exist in the atmosphere during the Proterozoic? Explain your answer.

6. What is a banded iron formation?

In your textbook, read about the formation of the oceans.

Use each of the terms below just once to complete the passage.

Archean

liquid water

minerals

oceans

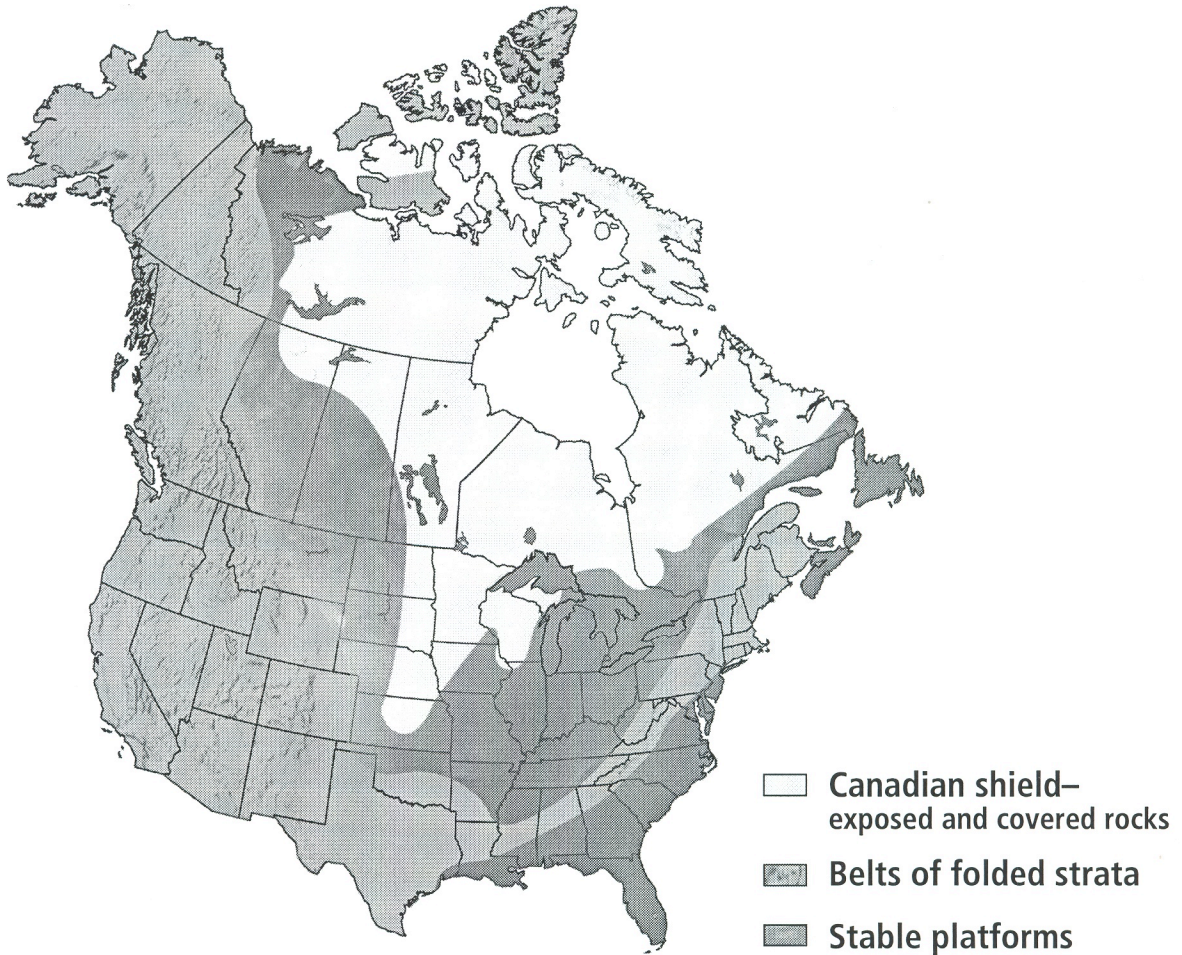
outgassing

water vapor

Seawater probably originated largely from the same process of **(7)** _____ that formed the atmosphere. A major component of the gas that was vented from early Earth was **(8)** _____.

As the early atmosphere and surface of Earth cooled, the water vapor in the atmosphere condensed to form **(9)** _____. During the **(10)** _____, rain slowly filled the low-lying areas on Earth. The low-lying areas were underlain by basalt, and as these basalt-floored basins filled, they formed the **(11)** _____. Rainwater reacted with the **(12)** _____ exposed at Earth's surface and dissolved them, making the oceans of the Precambrian salty.

The Canadian Shield



Use with Chapter 22
Section 22.2

The Canadian Shield

1. What is the core of ancient rock found in modern continents called?

2. What is the stable core of a continent called?

3. Where in North America is the Precambrian shield exposed?

4. In areas of a continent where the Precambrian shield is not exposed, what covers it?

5. During what periods did the rock of Precambrian shields form?

6. Of what is a craton composed?

SECTION 23.1 *The Early Paleozoic, continued*

In your textbook, read about early Paleozoic life.

Circle the letter of the choice that best answers the question.

15. To what does the Cambrian “explosion” refer?
 - a. the abrupt heating of Earth during the Cambrian
 - b. the giant meteor that struck Earth during the Cambrian
 - c. the great increase in the diversity and abundance of life-forms during the Cambrian
 - d. the abrupt increase in volcanic activity during the Cambrian
16. What development in animals created fossils that mark the Cambrian explosion?
 - a. hard, mineralized skeletons
 - b. gills
 - c. jaws
 - d. lobed fins
17. What is preserved in the Burgess Shale?
 - a. fossilized soft-bodied organisms from the Cambrian
 - b. fossilized sharks
 - c. modern echinoderms
 - d. only fossilized shelled animals
18. What feature of Cambrian organisms greatly increased the likelihood that their remains would become fossilized?
 - a. tough muscle fiber
 - b. skeletons and hard parts
 - c. amniote eggs
 - d. feathery appendages
19. Which of the following statements is NOT true about the Burgess Shale fossils?
 - a. They represent soft-bodied organisms.
 - b. They include organisms unrelated to any living phylum.
 - c. They have given paleontologists important insight into the Cambrian world.
 - d. Fossils of these organisms are found nowhere else on Earth.

SECTION 23.2 *The Middle Paleozoic, continued*

In your textbook, read about middle Paleozoic life.

Answer the following questions.

17. What have paleontologists deduced about the lengths of days and years during the Devonian? How did they make this deduction?

18. What features did fishes develop during the Paleozoic?

19. What allows land plants to live outside of the water?

20. Why did the development of seeds change the surface of the continents?

21. What is a mass extinction?

22. What evidence implies that overturning may have occurred during the late Devonian?

23. How might overturning contribute to the extinction of marine animals that live in surface water?

North America During the Jurassic

